



Statewide Public Health Meeting

MEASURING COMMUNITY HEALTH IN MISSOURI WITH
EXPLOREMOHEALTH.ORG

MAY 14, 2018

JEFFERSON CITY, MO

Discussion Outline:

1. **The Missouri County-Level Study**—Matt Kuhlenbeck, MA, Program Director, Missouri Foundation For Health
2. **The Missouri ZIP Health Rankings Project**—Elna Nagasako, MD, PhD, MPH, Assistant Professor, Department of Medicine, Washington University School of Medicine
3. **exploreMOhealth.org demo**—Mat Reidhead, MA, Vice President of Research and Analytics, Missouri Hospital Association, Hospital Industry Data Institute
4. **Applications for exploreMOhealth.org**—Leslie Porth, PhD, Senior Vice President of Strategic Quality Initiatives, Missouri Hospital Association
5. **Q&A**—all

a catalyst for change



Missouri Foundation
for **Health**

Why Create exploreMOhealth.org?

MFH is a resource for the region, working with communities and nonprofits to generate and accelerate positive changes in health.

We were seeking a way to share the 2016 CLS effectively and provide more granular data to communities to help aid local decision-making

Our partnership with MHA to launch exploreMOhealth.org supports our work as a resource for information that can be used to make more informed decisions

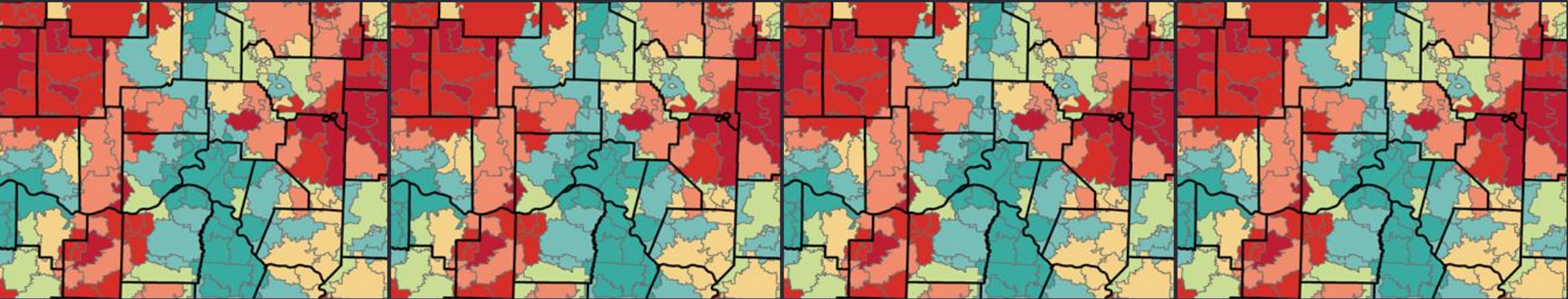
By combining our resources, we have created a unique and powerful tool that will help us target efforts where they're needed the most

Missouri County Level Study (CLS)

- Funded by MFH in partnership with the University of Missouri-Columbia Health and Behavioral Risk Research Center and the Missouri Department of Health and Senior Services
- Surveyed approximately 52,000 MO adults using CDC-recommended methods
 - 50% cell phone and 50% landline responses
 - Questions derived from Centers for Disease Control's Behavioral Risk Factor Surveillance Survey instrument (BRFSS); self reported health and preventative practice information
- The 2016 CLS added to prior studies from 2007 and 2011

CLS Data Elements

- Overall health status
- Health care coverage and access
- Tobacco use
- Obesity
- Chronic diseases (diabetes, heart disease, etc.)
- Screenings
- Nutrition
- Physical activity
- ...And many more



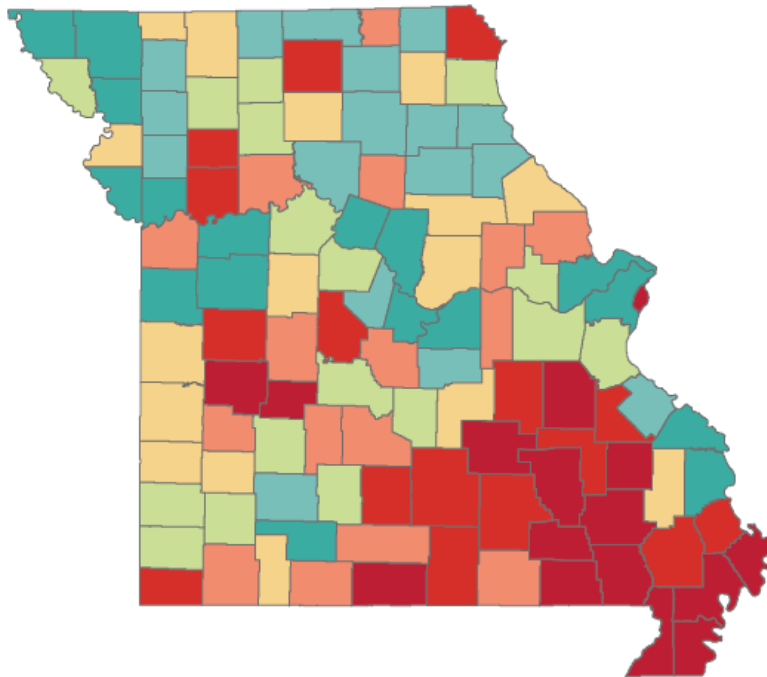
Missouri ZIP Code Health Rankings

Sub-County Level Population Health Indices Using
the County Health Rankings Framework

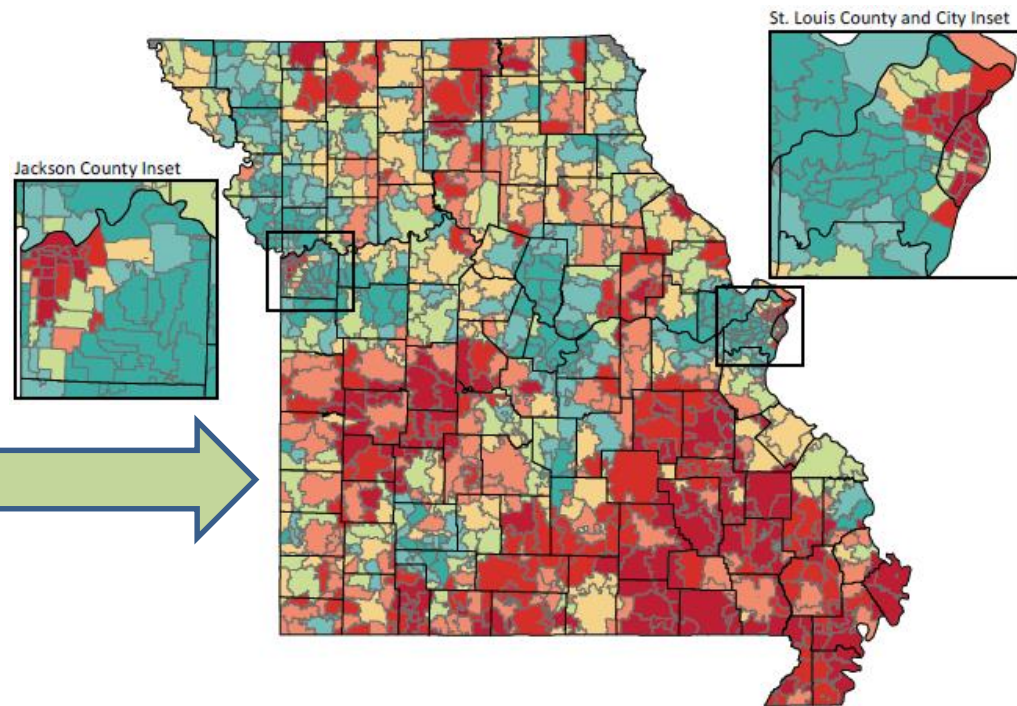
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Need for Health Data at the Sub-County Level

2014 Robert Wood Johnson

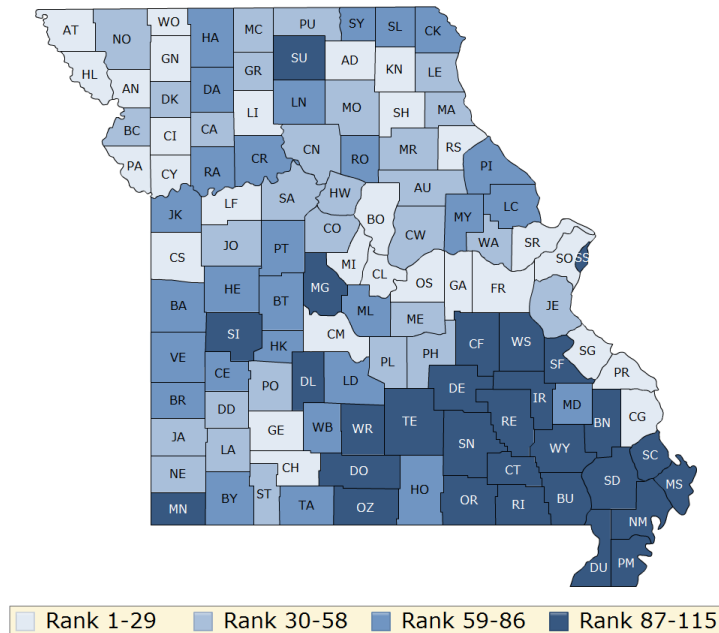


County-Level

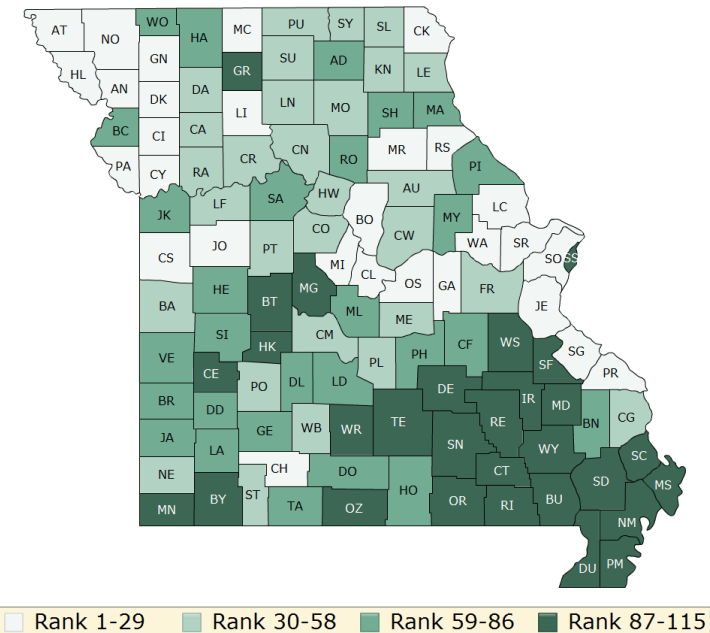


ZIP Code-Level

County Health Rankings-Missouri



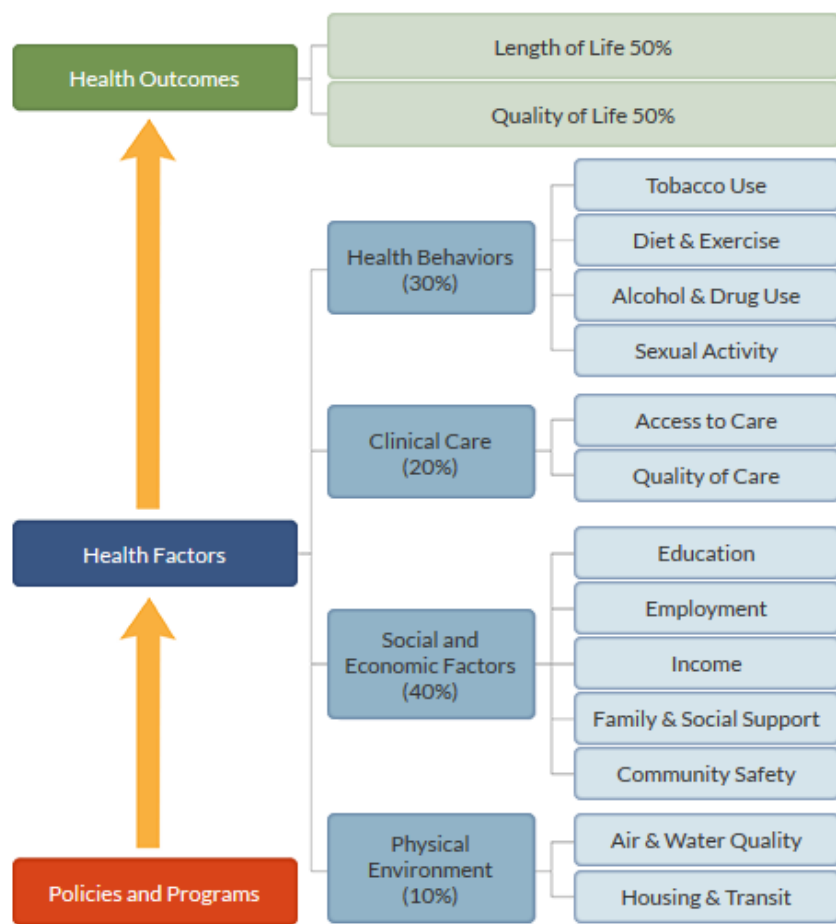
2018 Health Factors



2018 Health Outcomes

Source: County Health Rankings
<http://www.countyhealthrankings.org/rankings/data/mo>

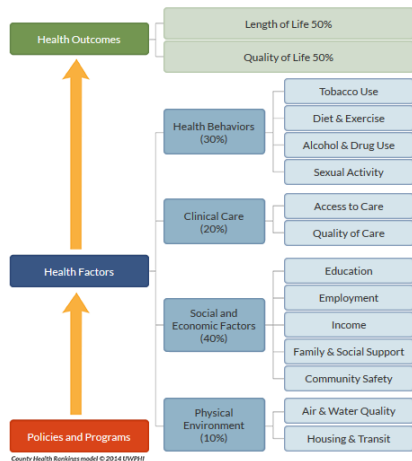
County Health Rankings & Roadmaps



County Health Rankings model © 2014 UWPHI

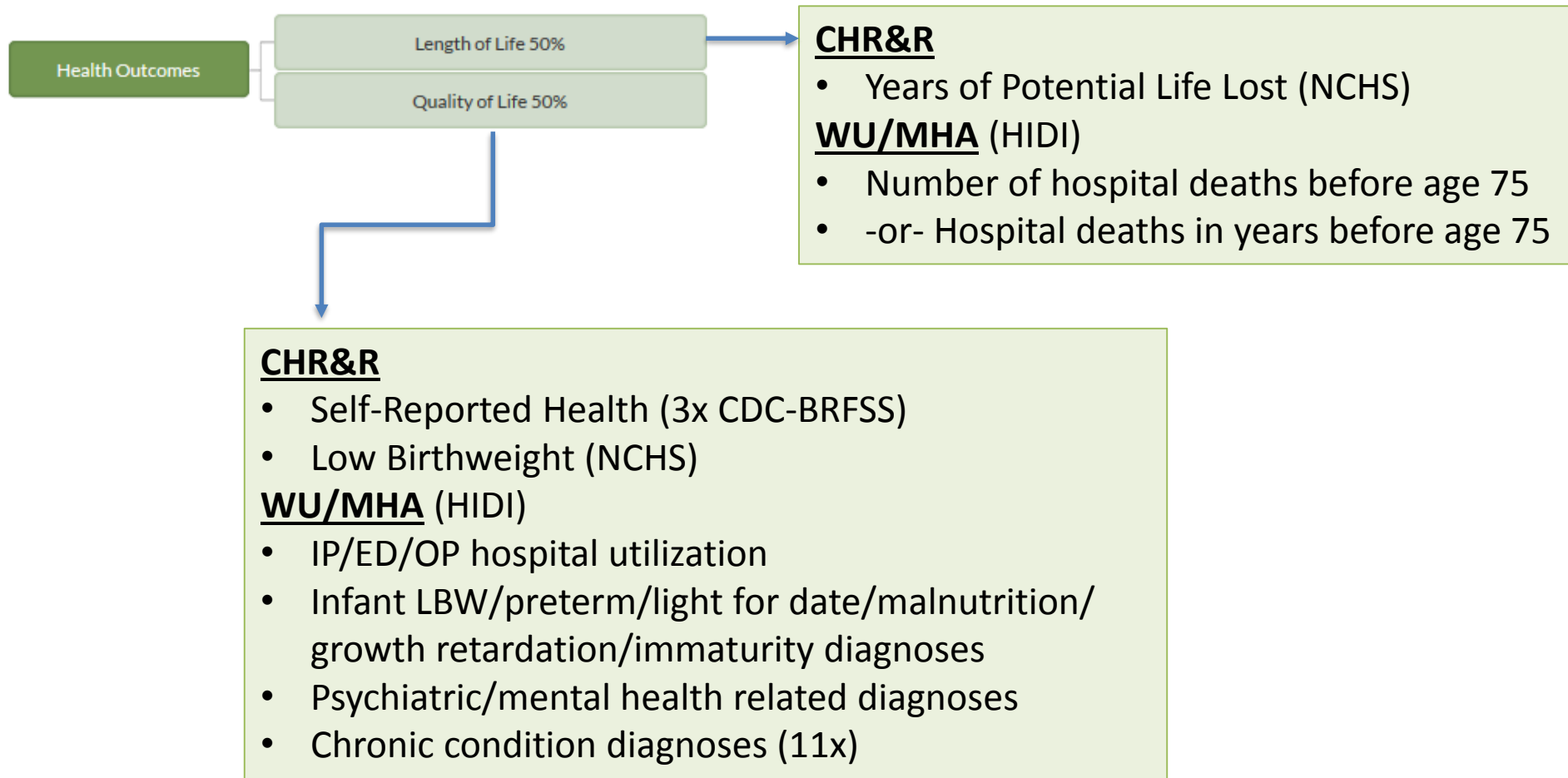
- County-level health ranking system for 50 states and DC
- Population health model causal order:
 - Health policies and programs result in health factors that determine health outcomes
- Rankings confined to intrastate-level
 - No national/interstate rankings
- Hundreds of measures compiled from 20+ national data sources into health factors and health outcomes domains
 - CDC, Census, BLS, USDA, FBI, HRSA, Dartmouth, etc.
- Overarching Goal: Promote action by raising awareness of multiple factors influencing health differently across counties
 - Prioritize → Intervene → Evaluate → Repeat

Our Approach

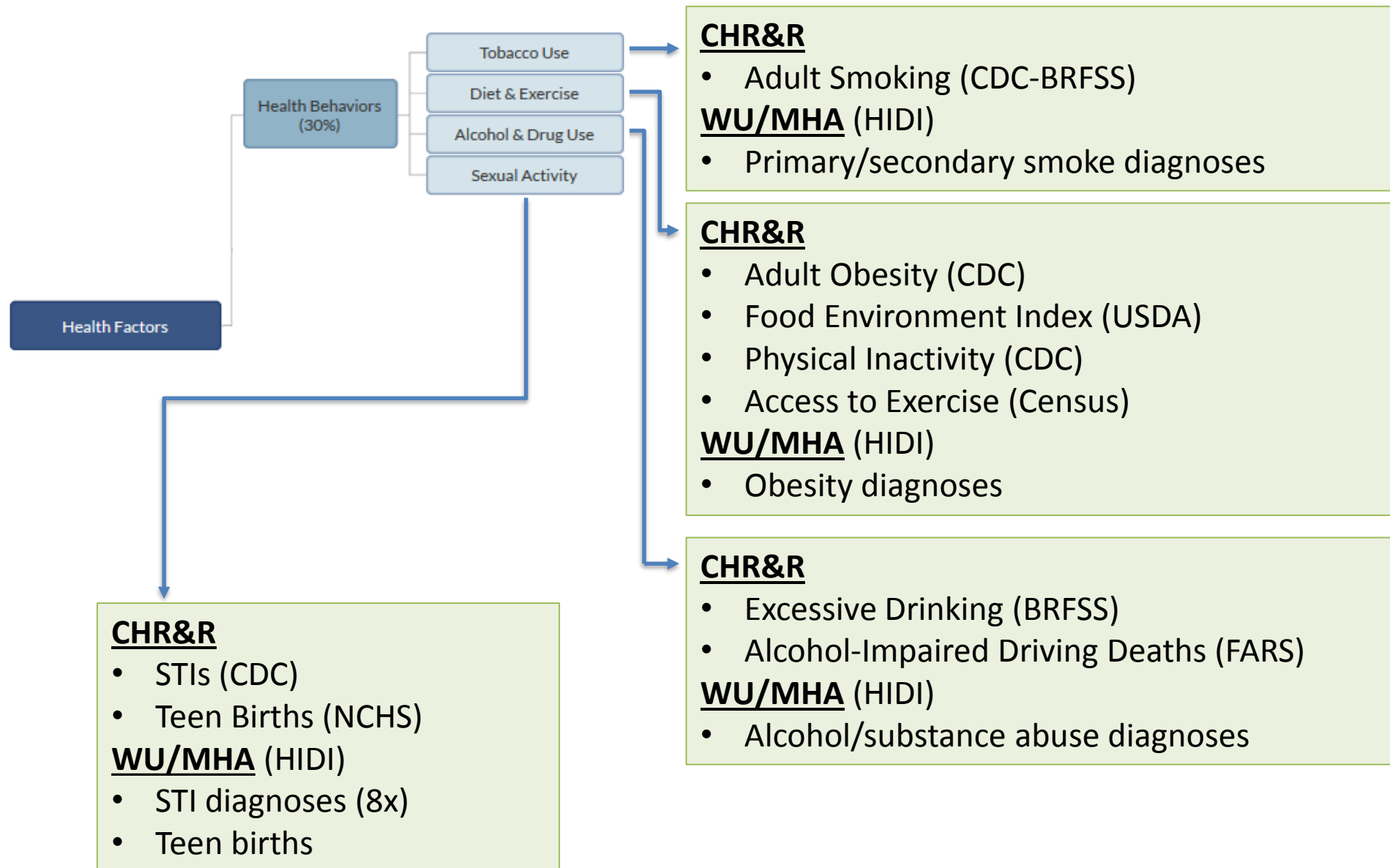


- Based on underlying CHR&R population health model
- Uses data available at ZIP-level
 - 3yrs hospital IP/OP/ED discharges (health factors)
 - Nielsen-Claritas (socioeconomic/demographic/environmental factors)
- ZIP-level indices fit to CHR&R domains
- Weighted aggregation at county-level for comparison to CHR&R results

Data Map: Health Outcomes



Data Map: Health Factors--Behaviors



Comparative Results: County to County

Health Factors:

Weighted Kappa = 0.66

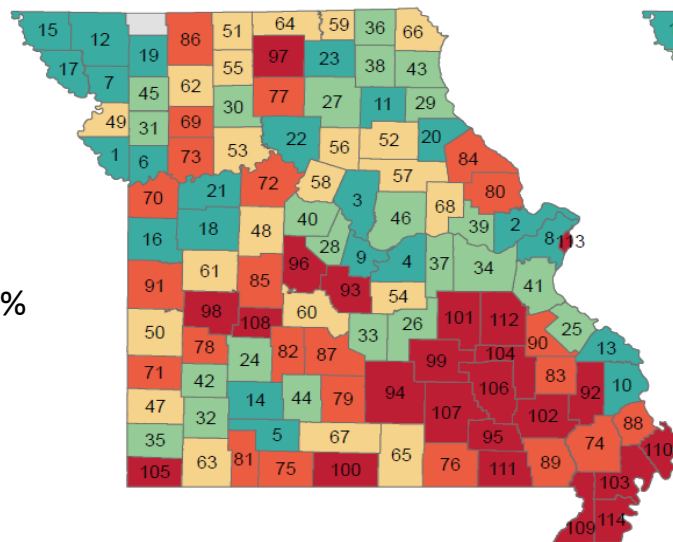
Correlation = 0.87

Percent of Counties in:

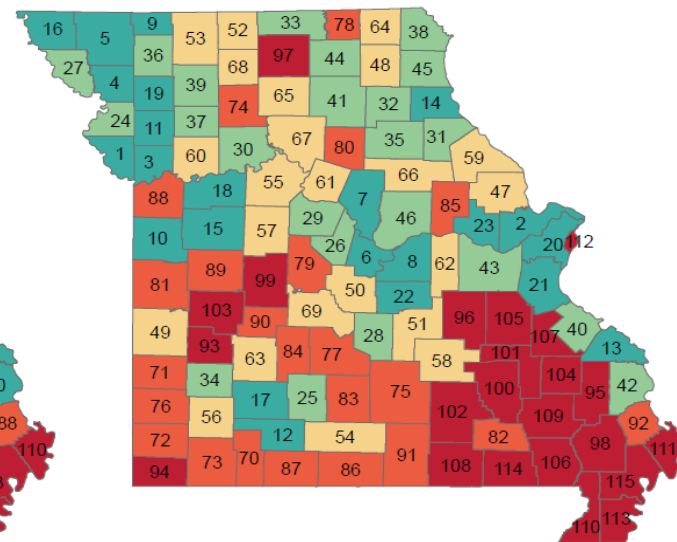
Same Quintile = 48%

Within One Quintile = 93%

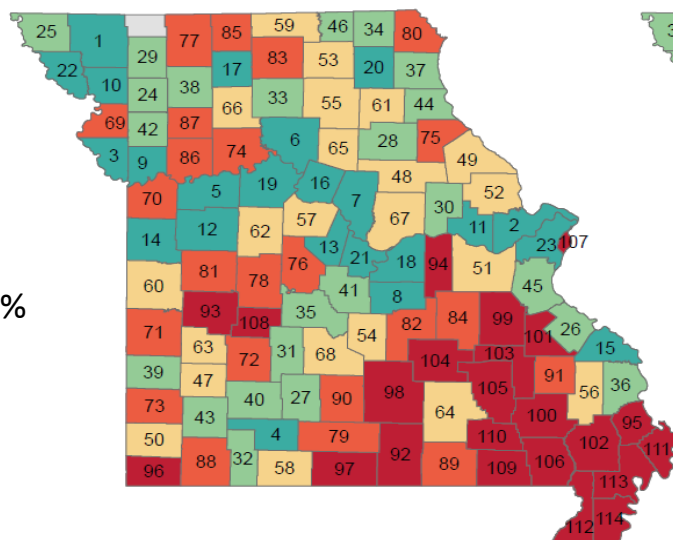
2015 CHR&R Health Factors Rankings



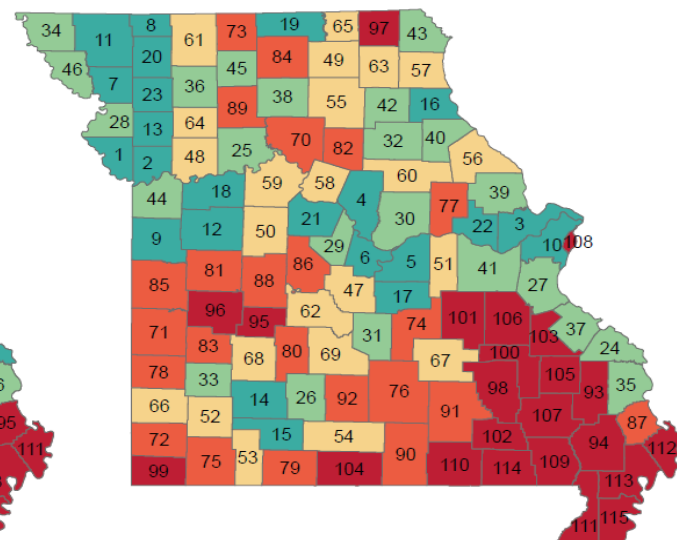
Aggregated ZIP-Derived Health Factors Rankings



2015 CHR&R Health Outcomes Rankings



Aggregated ZIP-Derived Health Outcomes Rankings:
CHR&R Augmented Model Option



Health Outcomes:

Weighted Kappa = 0.54

Correlation = 0.83

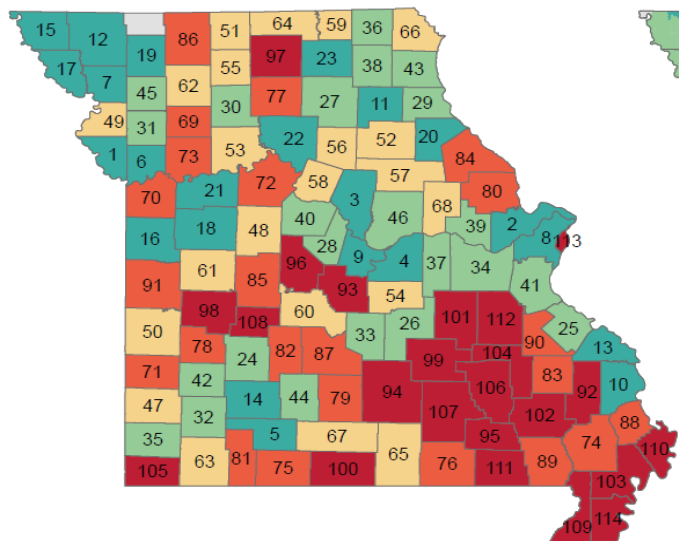
Percent of Counties in:

Same Quintile = 49%

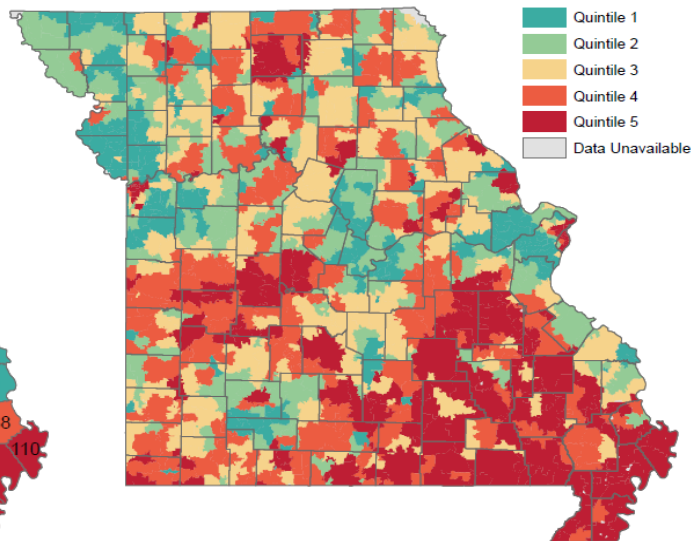
Within One Quintile = 83%

Comparative Results: County to ZIP Code

2015 CHR&R Health Factors Rankings



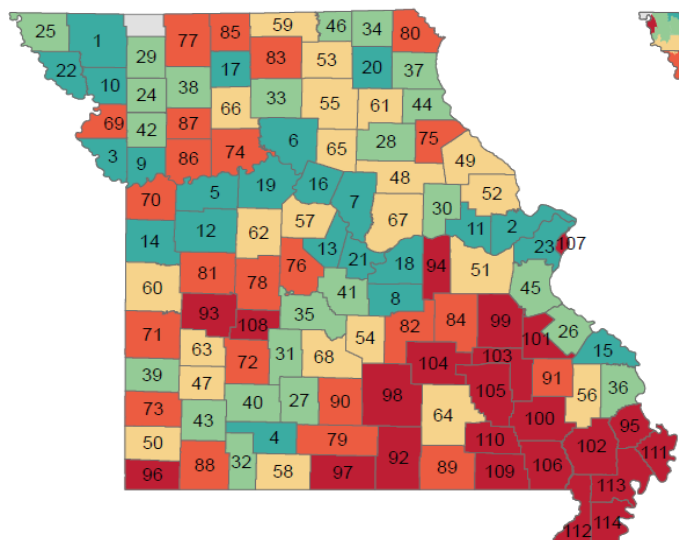
ZIP-Level Health Factors Rankings



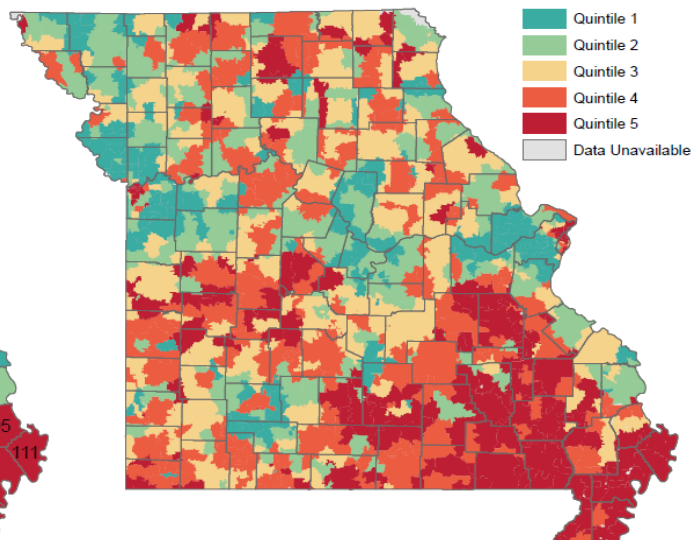
Sub-County Variation:

- Approximately half of the variation in derived health factors and outcomes scores observed at the ZIP code level

2015 CHR&R Health Outcomes Rankings



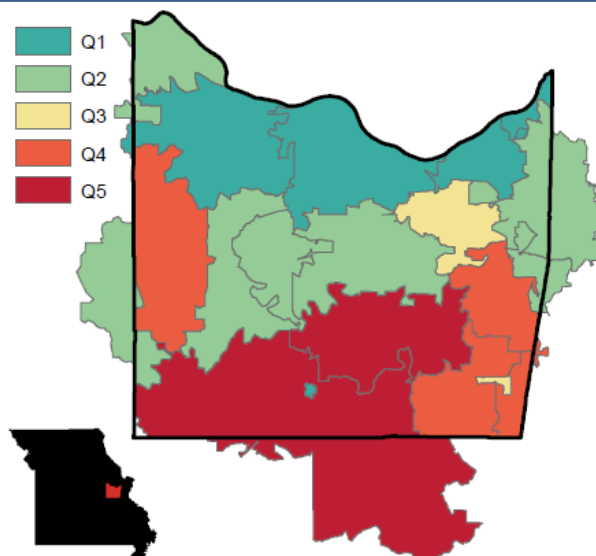
ZIP-Level Health Outcomes Rankings:
CHR&R Augmented Model Option



Sub-County Variation: Examples

Franklin County, Missouri

ZIP Ranking Range:
158 to 828 (of 976)



Franklin County Characteristics

Health Factors Rank: 38 of 115
Health Outcomes Rank: 35 of 115
2015 Population 102,426
Percent Non-White: 3.4

Top-Ranked ZIP Codes

| ZIP | Name | Statewide Rank of 976 |
|-------|------------|-----------------------|
| 63068 | New Haven | 158 |
| 63055 | Labadie | 165 |
| 63090 | Washington | 180 |

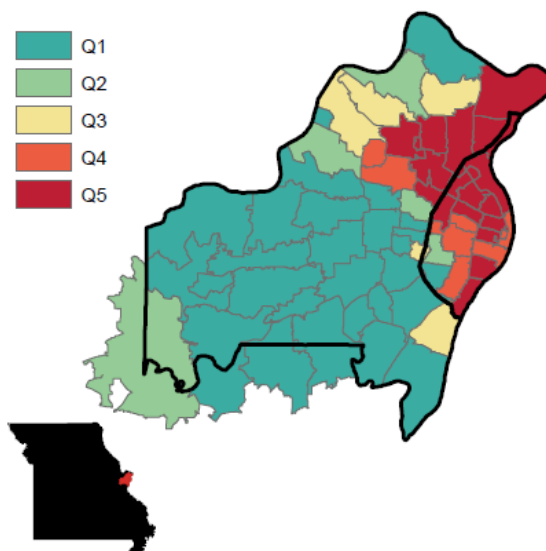
Bottom-Ranked ZIP Codes

| ZIP | Name | Statewide Rank of 976 | Top Health Determinant | Top Social Determinant |
|-------|--------------|-----------------------|------------------------|------------------------|
| 63077 | Saint Clair | 828 | Smoking | Unemployment |
| 63080 | Sullivan | 810 | Mental Health | ED Visits |
| 63041 | Grubville | 753 | Premature Deaths | Childhood Poverty |
| 63072 | Robertsville | 686 | Smoking | Unemployment |
| 63037 | Gerald | 649 | Kidney Disease | Preventable ED Visits |
| 63060 | Lonedell | 645 | Smoking | Unemployment |

Sources: Author's Calculations, 2016 County Health Rankings, and Roadmaps and U.S. Census Bureau QuickFacts

St. Louis City & County, Missouri

ZIP Ranking Range:
2 to 964 (of 976)



St. Louis city and County Characteristics

Health Factors Rank: 114 & 3 of 115
Health Outcomes Rank: 111 & 20 of 115
2015 Combined Population 1,319,047
Percent Non-White: 35.9

Top-Ranked ZIP Codes

| ZIP | Name | Statewide Rank of 976 |
|-------|--------------|-----------------------|
| 63005 | Chesterfield | 2 |
| 63038 | Glencoe | 4 |
| 63040 | Grover | 5 |

Bottom-Ranked ZIP Codes

| ZIP | Name | Statewide Rank of 976 | Top Health Determinant | Top Social Determinant |
|-------|-------------------|-----------------------|------------------------|-------------------------|
| 63107 | North City E. | 964 | Asthma | Unemployment |
| 63113 | The Ville | 963 | Asthma | Unemployment |
| 63115 | North City W. | 962 | Asthma | Unemployment |
| 63133 | Pagedale-Wellston | 942 | Asthma | Single Parent Household |
| 63136 | Jennings | 929 | Asthma | Single Parent Household |
| 63134 | Berkeley | 914 | Asthma | Single Parent Household |

Sources: Author's Calculations, 2016 County Health Rankings, and Roadmaps and U.S. Census Bureau QuickFacts



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exploreMOhealth

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How healthy is your county and ZIP code?

Compare County and ZIP Code Data

for Cole County

Code: [dropdown]

Highlighted County-Level Issues

- COPD
- Depressive Disorder (and/or if mental health days not good)
- Cancer
- Diabetes
- Asthma
- Angina or Coronary Heart Disease

Top Ranked ZIP Codes

| ZIP | Name | Statewide Rank of 958 (1=best) | Top Health Issue |
|-------|----------------|--------------------------------|-------------------------|
| 65053 | Lunnen | 56 | Skin Cancer |
| 65076 | Saint Thomas | 65 | Uterine/Cervical Cancer |
| 65139 | Jefferson City | 139 | Skin Cancer |

Bottom Ranked ZIP Codes

| ZIP | Name | Statewide Rank of 958 (1=best) | Top Health Issue |
|-------|----------------|--------------------------------|-----------------------|
| 65032 | Eugene | 344 | Lymphatic Cancer |
| 65101 | Jefferson City | 329 | Skin Cancer |
| 65023 | Camden | 295 | High Risk Mammography |

[VIEW FULL REPORT](#)

Explore Reports

- Learn More about a Specific Health Issue
- Investigate Information about Specific Indicators
- Find the Top Health Issues in Your Community

About the Data

exploreMOhealth was created in partnership between the **Missouri Foundation for Health** and the **Hospital Industry Data Institute**, the data company of the **Missouri Hospital Association**. By combining their resources they have created one of the most unique health-related datasets in the country. Data is the key to identifying and addressing some of our largest and greatest health issues, and by making this information available to the public, both organizations are furthering their missions to improve health and the health care system.

The traditional delivery of health care is moving beyond just bringing "better" into the world of hospitals and into managing the health of populations in the community. Health care providers are focusing on qualitative social determinants of health that often result in poor health outcomes. This shift is being driven in part by new regulations that require hospitals to work with public health agencies, local and state public health agencies, in sharing community health needs assessments and improvement plans to monitor their and their people's health. These efforts are expanding the collaborative delivery of care across the continuum — primary to quaternary, public health, social services, and community action organizations. It is critical that these collaborative efforts are founded on insightful form data that identify areas of need within different populations and across geographic locations.

Missouri Welcomes You

exploreMOhealth Magnifying Community Health in Missouri

Learn about exploreMOhealth.org during National Public Health Week.

The places where we live, learn, work, worship and play have a profound influence on our health. To improve population health, stakeholders must identify the influence of geography on health factors through meaningful community health data. Many believe that your ZIP code is a more powerful predictor of health than your genetic code.

- Launched on March 21, 2018
- Designed to inform Community Health Needs Assessments with unique and meaningful data sources:
 - County-level data from the MFH County-Level Study
 - ZIP code-level data from the HIDI and Washington University School of Medicine Missouri ZIP Health Rankings Project
 - Open to public
- Live [Demo](#)

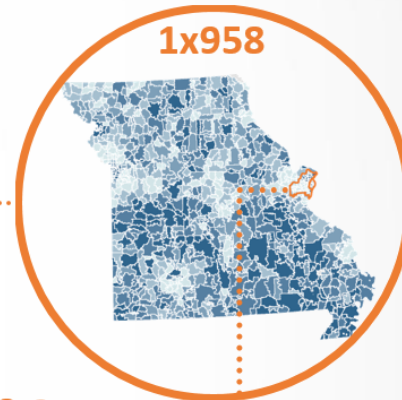
Missouri ranks **41st lowest** in the country for women and children's health in 2018.



Across Missouri's 115 counties, St. Louis County **rank 8th** while St. Louis city ranks **113th** in 2018.



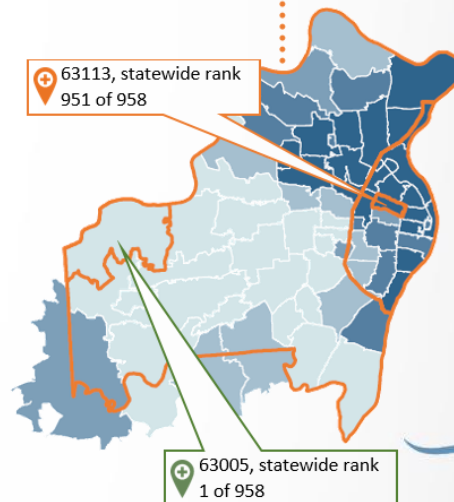
Across Missouri's 958 ZIP codes, St. Louis city & County have one that is ranked the healthiest in the state, and another that ranks 951st.



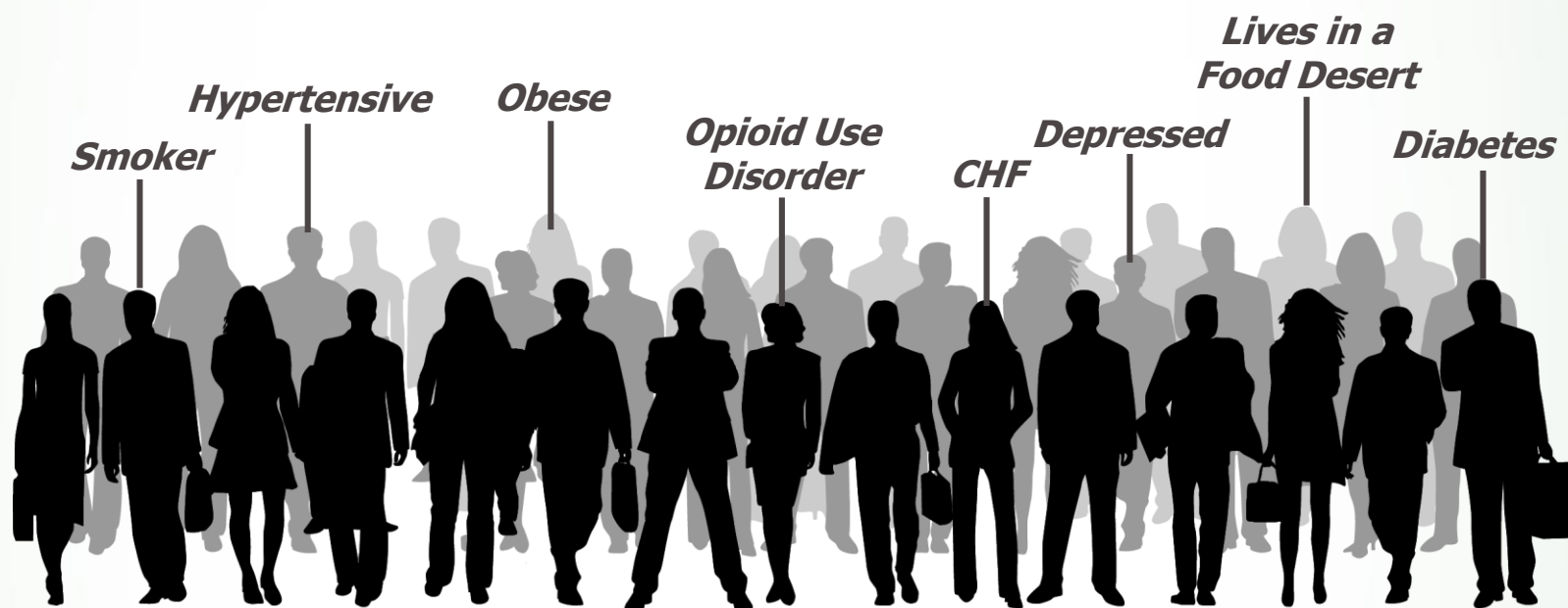
Here's what we found for St. Louis city & County:

Separated by only 17 miles, 63005 in the St. Louis suburb of Chesterfield and 63113 in North city are worlds apart on health. Here are a few of the factors driving these differences:

| | 63113 (951 of 958) | 63005 (1 of 958) | Disparity Factor |
|----------------------------------|-----------------------|---------------------|---------------------|
| Household Income | \$24,430 | \$158,560 | 6.5x |
| Smoking per 1,000 | 463.8 | 50.3 | 9.2x |
| Obesity per 1,000 | 86.0 | 17.6 | 4.9x |
| Substance Use Disorder per 1,000 | 18.8 | 3.2 | 5.9x |
| Teen Pregnancy per 1,000 | 83.6 | 0.35 | 239x |
| Diabetes Diagnosis per 1,000 | 266.4 | 75.5 | 3.5x |
| ER Visits per 1,000 | 971.7 | 244.0 | 4.0x |



Population Health Management: Moving Upstream



"The most important five-digit number I need to predict your health status and well-being is your ZIP code, bar none ... not your cholesterol level, or your blood pressure, or your age."

David Nash, M.D., Jefferson College of Population Health, Dean



Actual Causes of Premature Death

Proportional Contribution to Premature Death

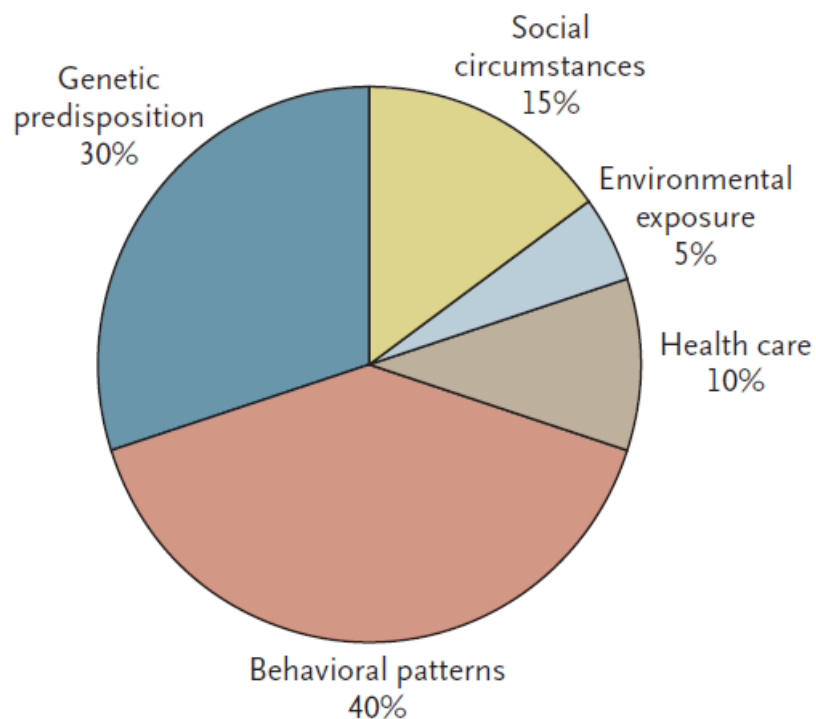
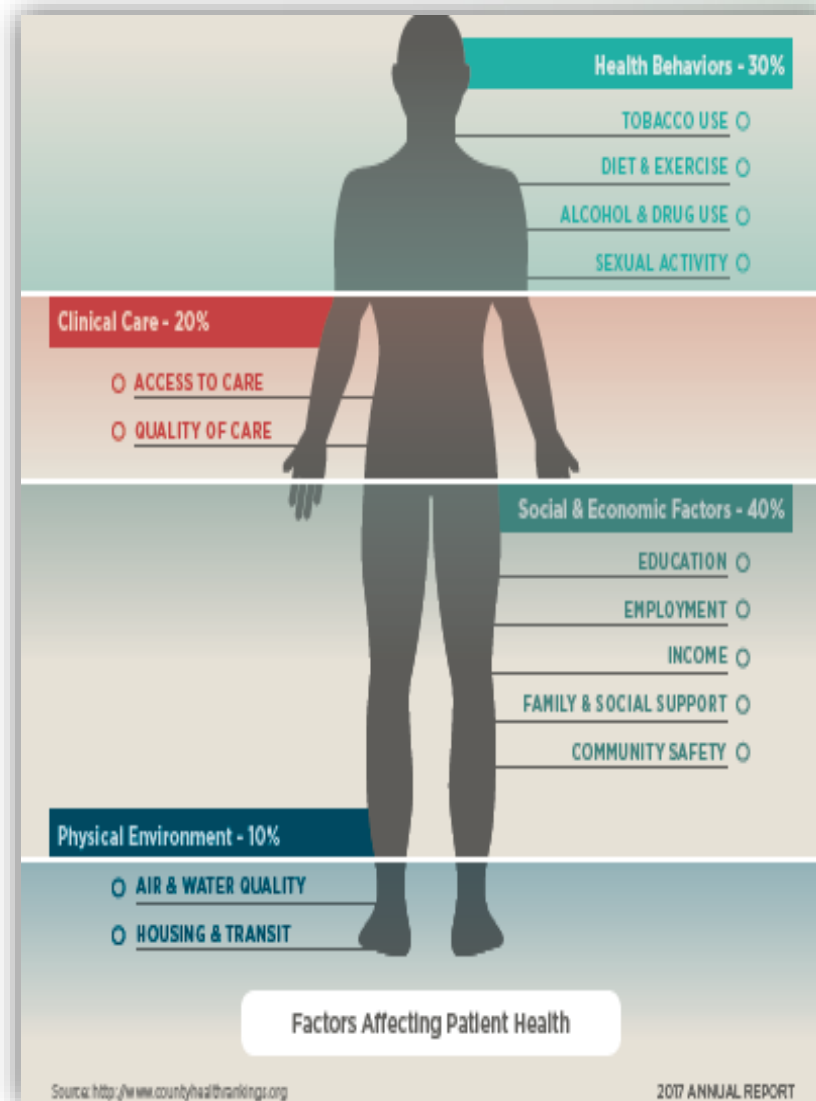


Figure 1. Determinants of Health and Their Contribution to Premature Death.

Adapted from McGinnis et al.¹⁰



Focus

Completing A Community Health Needs Assessment 2017 Guidance



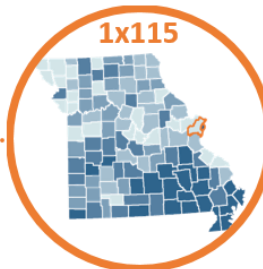
Community Health Needs Assessment 2017 Implementation Guide



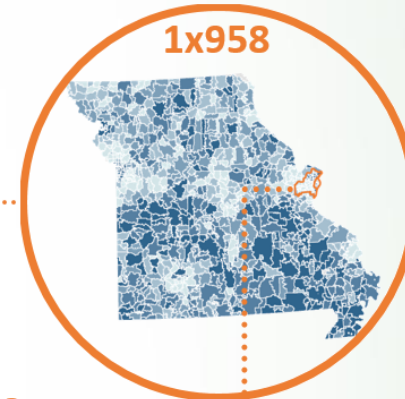
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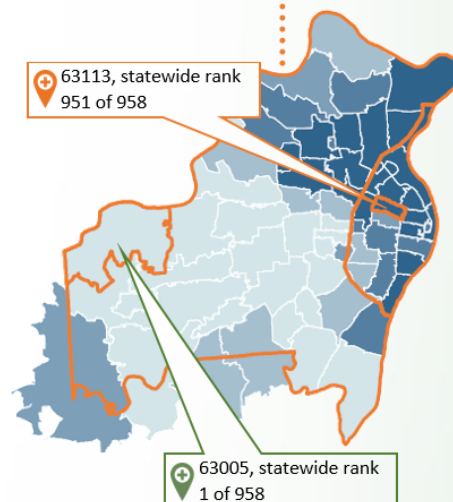
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Surgically Targeted Strategic Success

Formula:

[Action] [health issue] among [specific population] residing in [ZIP codes] of [specific region] from [x] to [y] by [date].

- Provide tobacco cessation and substance-use treatment programs for pregnant teenagers in 63113 of St. Louis to reduce use from x to y by 2020.
- Increase access to healthy food for pregnant teenagers in 63113 of St. Louis through twice-weekly foodbank programs by 2018.

